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U.S. Nuclear Regulatory Commission
Division of Administrative Services
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Washington, DC 20555-0001

Rules and Directives
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ATTN: Chief, Rules and Directives Branch

RE: Proposed Generic Communication; Potential Impact of Debris
Blockage on Emergency Recirculation During Design Basis Accidents
at Pressurized Water Reactors, 69 Fed. Reg. 16,980 (March 31, 2004)

Ladies and Gentlemen:

I. Introduction

On March 31, 2004, the Nuclear Regulatory Commission ("NRC" or "the Staff") published the captioned proposed generic letter for public comment. Provided below are comments by the Nuclear Utility Backfitting and Reform Group ("NUBARG").¹ NUBARG appreciates the opportunity to comment on this important topic.

The Staff is proposing to request that licensees of operating pressurized-water reactors ("PWRs") submit information to the NRC concerning the status of compliance with 10 C.F.R. § 50.46(b)(5) long-term reactor core cooling requirements following a design basis loss-of-cooling accident ("LOCA"). The Staff indicates that the reason for the information request is that its research and analyses suggest that the potential for failure of the emergency core cooling system ("ECCS") and containment spray system ("CSS") recirculation functions as a result of debris blockage may not be adequately addressed in most PWR licensees' current safety analyses; that these functions could become degraded due to debris blockage or debris laden fluids; and that the resulting degradation could impact a plant's post-LOCA long-term cooling

¹ NUBARG is a consortium of utilities formed in the early 1980s which participated actively in the development of the NRC's backfitting rule (10 C.F.R. § 50.109) in 1985, and which has closely monitored the NRC's application of the rule since that time.

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capability.² In regard to these potential concerns, the proposed generic letter would request that licensees provide certain information within 60 days, and additional information by April 1, 2005. If a licensee chooses not to provide the requested information, then that licensee must respond within 15 days of the date of the generic letter and address any planned alternative course of action.

The NRC proposes to request this information in accordance with 10 C.F.R. § 50.54(f). In that regard, the Staff states that “no backfit is either intended or approved by the issuance of this generic letter, and the staff has not performed a backfit analysis,” and that the information request is to verify compliance with existing regulatory requirements.³ The Staff further states that “[t]his information is sought to verify licensees’ compliance with current licensing basis for the subject PWR addressees.”⁴

In this instance, NUBARG is concerned that (1) the Staff does not appear to be following appropriate administrative processes in this proposed action (in that the Staff has not justified the information request in accordance with 10 C.F.R. § 50.54(f) and 10 C.F.R. § 50.109) and (2) the request is premature in that the Staff has suggested use of a proposed methodology, which does not yet exist. With these considerations, NUBARG recommends that the Staff not issue the generic letter or, at a minimum, provide the appropriate 10 C.F.R. § 50.109 justification and await completion of the Staff’s review and approval of the referenced industry methodology before issuing its request of the industry.

II. Discussion

A. Backfitting and Information Requests

1. Backfitting

In 1985 (as modified in 1988), the Commission imposed upon itself a disciplined process for managing backfitting of nuclear power plants through promulgation of 10 C.F.R. §

² 69 Fed. Reg. at 16,985.

³ 69 Fed. Reg. at 16,986.

⁴ *Id.* We note that this action follows issuance of Bulletin 2003-01, which requested that affected licensees provide information concerning either (1) compliance with regulatory requirements; or (2) compensatory measure taken to reduce the risk of potentially degraded or nonconforming functions for post-LOCA long-term core cooling. NRC Bulletin 2003-01, “Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors” (June 9, 2003).

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50.109, commonly referred to as the "backfit rule."⁵ "Backfitting" is defined as the modification of or addition to systems, structures, components, or design of a facility; or the design approval or manufacturing license for a facility; or the procedures or organization required to design, construct or operate a facility; any of which may result from a new or amended provision in the Commission rules or the imposition of a regulatory staff position interpreting the Commission rules that is either new or different from a previously applicable staff position. 10 C.F.R. § 50.109(a)(1).

According to the backfit rule, a backfit may be imposed when (1) the backfit would provide a substantial increase in public health and safety; (2) when the backfit is necessary to bring a facility into compliance with a license or Commission rules or orders, or into conformance with written commitments by the licensee; (3) when the backfit is necessary to assure adequate protection of the public health and safety, or (4) when the backfit would redefine what level of public protection is adequate. 10 C.F.R. § 50.109.

Regarding the compliance exception, the Commission has stated that:

The compliance exception is intended to address situations in which the licensee has failed to meet known and established standards of the Commission because of omission or mistake of fact. It should be noted that new or modified interpretations of what constitutes compliance would not fall within the exception and would require a backfit analysis.⁶

The NRC also discusses the compliance exception in its backfitting guidance, indicating that "[t]he compliance exception in 10 CFR 50.109 is certainly meant to be used only when specifically authorized and justified by the appropriate office director. Further, the [Committee to Review Generic Requirements ("CRGR")] Charter provides added assurance that new requirements and staff positions are fully consistent with the provisions of the backfit rule."⁷ The NRC guidance further states that, even when the Staff relies on the compliance exception (particularly as related to new staff positions that reflect an evolving understanding of technical issues), "a written evaluation is needed to provide the objectives of and reasons for the modification and the basis for invoking the exception."⁸ The proposed information request

⁵ 50 Fed. Reg. 38,097 (Sept. 20, 1985); and 53 Fed. Reg. 20,603 (June 6, 1988).

⁶ *Id.*, at 38,103.

⁷ NUREG-1409, "Backfitting Guidelines" (July 1990), at 14.

⁸ *Id.*, at 12.

appears to invoke the compliance exception for an evolving understanding of the dynamics and effects of debris on PWR containment sump performance.

Notwithstanding the apparent NRC reliance on the compliance backfit exception, it also appears that the "adequate protection" exceptions may apply in this instance. Regarding the "adequate protection" exceptions to the requirements to perform a backfitting analysis, the Commission has stated that "'adequate protection' is presumptively assured by compliance with the regulations and other license requirements."⁹ As further explained, "the presumption may be overcome by, for instance, new information which indicates that improvements are needed to ensure adequate protection."¹⁰ In those instances where compliance has proven to be insufficient, the Staff may apply one of the two "adequate protection" exceptions to require a licensee to take actions to provide the additional level of assurance of public protection.

In summary, the backfit rule simply establishes a procedural process, and is not intended to prohibit Staff actions that are necessary to assure protection of public health and safety. Nevertheless, 10 C.F.R. § 50.109 must be followed by the Staff. As such, it is the Staff's burden to justify that a backfit is necessary pursuant to one or more of the criteria in the rule. The requirements in 10 C.F.R. § 50.109 include those circumstances when the NRC imposes new or changed regulatory positions. Following 10 C.F.R. § 50.109 also includes justifying, as directed by the regulation, those examples when the compliance exception or adequate protection exceptions are invoked.

2. Information Requests

Section 50.54(f) provides a process whereby the Commission may request information from a licensee to determine whether or not a facility's license should be modified, suspended, or revoked. Depending upon the type of requested information, a licensee could expend significant resources in preparing a response to such a request. To address this potential burden, at the same time that it amended the backfit rule, the Commission also amended 10 C.F.R. § 50.54(f). The amendment was to ensure that, for information other than that sought to verify compliance with the current licensing basis for a facility, the Staff does not impose a burden through an information request without proper justification (*see* quote below). In this manner, the backfit rule and the provisions for requesting information work in tandem to better ensure that the Commission applies discipline in conducting its actions and to prevent the imposition of unnecessary and unjustified burdens on licensees.

Discussing the necessary justification for requesting information, in its rulemaking amending Sections 50.109 and 50.54(f), the Commission stated the following:

⁹ 53 Fed. Reg. at 20,606.

¹⁰ *Id.*

The ... amendment of § 50.54(f) ensures that except for information sought to verify licensee compliance with the current licensing basis for that facility, the reason or reasons for each information request must be prepared prior to its issuance to determine whether the request is for information already in the possession of the applicant or licensee or instead will require the institution of studies, procedures, or other extensive effort to generate the necessary data to respond. If extensive effort is reasonably anticipated, the request will be evaluated to determine whether the burden imposed by the information request is justified in view of the potential safety significance of the issue to be addressed. ... If the request is not part of routine licensing review and falls within the purview of § 50.109, however, a full [backfit] analysis is most likely indicated. ... The amendment of § 50.54(f) should be read as indicating a strong concern on the part of the Commission that extensive information requests be carefully scrutinized by staff management prior to initiating such requests. The Commission recognized that there may be instances where it is not clear whether a backfit will follow an information request. Those cases should be resolved in favor of analysis.

NUBARG suggests that the NRC has gone beyond the Commission-anticipated scope of a 10 C.F.R. § 50.54(f) request in the proposed issuance. First, the document and its supporting discussion do not appear to provide licensees with an assessment of the associated regulatory burden since, as acknowledged by the NRC, some of the requested actions cannot be quantified at this time due to the non-existence of the suggested methodology. Second, licensees already have an NRC-approved licensing basis regarding sump screen issues. The request, which arguably may require a licensee to perform an analysis consistent with the NRC's new position, even if the licensee does not want to adopt that new approach, is tantamount to a backfit of the position on the licensee. For example, the proposed generic letter suggests that licensees use industry guidance (once approved by the NRC), or "develop alternative approaches" for which additional NRC staff review may be required, to determine compliance, and requests that licensees provide information describing "the methodology that was used to perform an analysis of the susceptibility of the ECCS and CSS recirculation functions to the adverse effects of post-accident debris blockage and operation with debris laden fluids."¹¹

B. Concerns

NUBARG is concerned with the proposed generic letter because it appears that (1) at a minimum, it represents a compliance or adequate protection backfit; (2) if it is a compliance or adequate protection backfit, it does not appear that an adequate regulatory analysis consistent with 10 C.F.R. § 50.109(a)(6) for either of these exceptions has been prepared or shared with the industry; (3) a licensee may be required to perform analyses to respond to the

¹¹ 69 Fed. Reg. at 16,984-5.

generic letter even though analysis methodologies are outside the scope of the plant licensing basis; and (4) the letter is too vague in that it requests a commitment by a licensee to an evaluation methodology not yet developed. Although the Staff makes its request pursuant to 10 C.F.R. § 50.54(f), and requests that licensees verify compliance with their current licensing basis and existing NRC regulations, the Staff has not provided justification for the burden imposed by the information request in view of the potential safety significance of the issue. Also, as previously noted, the request appears, in great part, to be duplicative of a previously issued bulletin.

1. Compliance Backfit

The Staff suggests that the information that it would request in the generic letter is necessary to ensure that licensees comply with their current licensing basis and existing NRC regulations. However, the information request clearly establishes that the Staff expects many licensees will find it necessary to perform complex calculations, change their plant's licensing basis, and modify the plant. For example, the Staff states that licensees should use the enhanced debris blockage evaluation guidance in Regulatory Guide ("RG") 1.82 (Rev. 3, Nov. 2003), "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident," even though most, if not all, of the affected licensees have not committed to comply with this revision of RG 1.82.¹²

As another example, in the proposed generic letter, the Staff explains the background of Generic Safety Issue ("GSI") 191, "Assessment of Debris Accumulation on PWR Sump Performance," and suggests that it may be necessary for licensees to "undertake complex evaluations to determine whether regulatory compliance exists" in light of new information that indicates previous Staff positions regarding sump blockage may not be conservative.¹³ The Staff also admits that methodologies to perform such complex evaluations may not be currently available.¹⁴ If these actions are necessary to ensure compliance with NRC regulations, then, in accordance with 10 C.F.R. § 50.109, the Staff should clarify its position in the generic letter.

¹² E.g., RG 1.82, Revision 0, "Sumps for Emergency Core Cooling and Containment Spray Systems," was issued June 1974. RG 1.82, Revision 1, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident," was issued November 1985.

¹³ 69 Fed. Reg. at 16,982.

¹⁴ *Id.*

2. Compliance Backfit Evaluation Requirement

To comply with its regulatory process requirements, the Staff should clarify in the "Backfit Discussion" that the information request falls within the compliance exception of the backfitting rule (or justify that one of the other exceptions apply). 10 C.F.R. § 50.109(a)(4). Pursuant to this provision, the Staff must demonstrate that its actions are within one of the exceptions. "New or modified interpretations of what constitutes compliance would not fall within the exception and would require a backfit analysis."¹⁵

Even when the Staff makes a determination that an action is necessary to bring a facility into compliance with a license, rule or order, or into conformance with a written commitment, it still must document the evaluation for its determination. 10 C.F.R. § 50.109(a)(4). The documented evaluation must include a statement of the objectives of and reasons for the modification and the basis for invoking the exception. 10 C.F.R. § 50.109(a)(6).

The proposed generic letter does not adequately justify that the information request is necessary for assuring compliance with existing requirements or commitments. The Staff, therefore, should modify the "Backfit Discussion" to include adequate justification for its position that the information is necessary for it to make a determination that the affected licensees comply with the referenced regulatory requirements for assuring post-accident long-term cooling. If the Staff cannot make this finding, then it must justify the backfit otherwise, or perform a backfit analysis to demonstrate that there will be a substantial increase in the overall health and safety of the public in view of the burden imposed through the information request. 10 C.F.R. § 50.109(a)(3).

3. Extent of Actions Necessary to Respond to Information Request

NUBARG maintains that the provisions of Section 50.109 apply generally to information requests pursuant to 10 C.F.R. § 50.54(f), as discussed in the above-quoted references, and apply specifically to the proposed generic letter due to the extent of the efforts that would be involved in responding to the request.¹⁶ As noted above, licensees may find it

¹⁵ 50 Fed. Reg. at 38,103. If the Staff cannot justify that its actions fall within the compliance exception, then the Staff must either demonstrate that its actions are necessary for adequate protection, or it must perform a backfit analysis. We note that the Staff references a number of studies and research activities justifying the bases for its concerns; yet, it does not demonstrate that these activities justify the Staff's need for information in view of the burden involved in responding to the information request.

¹⁶ "[E]xtensive information requests [must] be carefully scrutinized by staff management prior to initiating such requests. The Commission recognized that there may be instances where it is not clear whether a backfit will follow an information request. Those cases should be resolved in favor of analysis." 50 Fed. Reg. at 38,102.

necessary to perform complex calculations, change their plant's licensing basis, and to modify the plant to address the concerns identified in the proposed generic letter. Pursuant to 10 C.F.R. § 50.54(f) and 10 C.F.R. § 50.109, the Staff must justify these burdens that are outside the scope of a plant's current licensing basis, even if the Staff makes a determination that these actions are necessary to assure compliance with regulations or adequate protection of public health and safety.

4. Vagueness of Information Request

The industry proposed a methodology for evaluating PWR sumps and provided it to the Staff for review.¹⁷ Although the Staff has indicated that it is reviewing generic industry guidance, and will issue a safety evaluation on the portions that may be used to assist in determining the status of regulatory compliance, it gives no estimate of the schedule for completing this review.¹⁸ The generic letter would, however, request licensees to provide an initial response the generic letter in a time frame that could be prior to the Staff's approval of the industry guidance. It is also not clear at this time whether many of the affected licensees may need to seek Staff review and approval of the plant-specific implementation of the industry methodology in order to change their plant's licensing basis.¹⁹

The Staff's review and approval schedule could also impact a reply by April 1, 2005, wherein a licensee is to demonstrate compliance and address "the configuration of the plant that will exist once all modification required for regulatory compliance have been made."²⁰ Licensees that are planning outages scheduled to begin shortly after April 1, 2005, would likely

¹⁷ Nuclear Energy Institute, Draft, "PWR Containment Sump Evaluation Methodology" (Oct. 31, 2003).

¹⁸ We note that, at a public meeting conducted May 19, 2004, the Staff indicated that it plans to issue the generic letter in the July – August timeframe, and complete its review of the industry methodology in the September – October timeframe. With this schedule, many licensees will be required to respond to an information request and provide schedules for certain actions that may be dependent upon their ability to use the industry methodology, which will not have been approved by the Staff at the time of the response.

¹⁹ In accordance with 10 C.F.R. § 50.59, using a new methodology could "result in a departure from a method of evaluation described in the FSAR (as updated) used in establishing the design basis or in the safety analyses," and, therefore, could require NRC approval of a license amendment prior to implementing a change to the licensing basis. 10 C.F.R. § 50.59(c)(2)(viii).

²⁰ 69 Fed. Reg. at 16,984.

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be unable to complete corrective actions, as requested by the proposed generic letter, and, yet, would required to provide justification for the delays.²¹

C. Conclusions and Recommendations

It appears that (1) the NRC has not adequately justified issuance of the proposed generic letter pursuant to 10 C.F.R. § 50.109 and (2) the information request is premature and, therefore, the ongoing industry and Staff efforts in support of resolution of GSI-191 should continue on a generic basis. Further, the NRC proposed request appears to be duplicative in that the Staff obtained plant-specific information on this generic issue through licensees' responses to Bulletin 2003-01. The Staff, thus, already would appear to have information providing assurance that the affected licensees are addressing the issue through ongoing industry efforts and interactions with the Staff. All of these observations support the NUBARG conclusion that the proposed generic letter does not justify that the Staff needs the requested additional information at this time.

If you have any questions regarding NUBARG's comments or recommendations, please contact Thomas Poindexter or Patricia Campbell.

Sincerely,



Thomas C. Poindexter
Patricia L. Campbell
Counsel for NUBARG

cc: C. Ader, CRGR Chairman
A. Marion (Nuclear Energy Institute)

²¹

Id.